Navy Personnel Research and Development Center
San Diego, CA 92152-7250 TN-96-18 February 1996

Comparison of C-MIS Response Patterns Across Varying Categories of Respondents

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San Diego, CA 92152-7250

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

1. AGENCY USE ONLY *(Leave blank)*	2. REPORT DATE	3. REPORT TYPE AND DATE COVERED
	Feabruary 1996	Interim 1992-1994

4. TITLE AND SUBTITLE
Comparison of C-MIS Response Patterns Across Varying Categories of Respondents

5. FUNDING NUMBERS
Program Element: Reimbursable
Work Unit: 92WRR5121

6. AUTHOR(S)
Marjorie M. Sands, Herbert George Baker

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)
Navy Personnel Research and Development Center
53335 Ryne Road
San Diego, CA 92152-7250

8. PERFORMING ORGANIZATION REPORT NUMBER
NPRDC-TN-96-18

9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)
Chief of Naval Personnel (PERS-23)
Navy Department
Washington, DC 20370-5000

10. SPONSORING/MONITORING AGENCY REPORT NUMBER

11. SUPPLEMENTARY NOTES
Functional Area: Personnel
Product Line: Printed Tests
Product Line: C-MIS

12a. DISTRIBUTION/AVAILABILITY STATEMENT
Approved for public release; distribution is unlimited.

12b. DISTRIBUTION CODE
A

13. ABSTRACT *(Maximum 200 words)*

This report documents research using the Civilian-Military Interest Survey (C-MIS). Response patterns vary according to the category of test subject, which included Navy recruits, high school students, and Navy recruiters in training. Findings are generally in accord with the Holland theory upon which the test was constructed.

14. SUBJECT TERMS
Interest Measurement, Military Testing, Recruits, Civilian-Military Interest Survey, Gender Differences

15. NUMBER OF PAGES
21

16. PRICE CODE

17. SECURITY CLASSIFICATION OF REPORT	18. SECURITY CLASSIFICATION OF THIS PAGE	19. SECURITY CLASSIFICATION OF ABSTRACT	20. LIMITATION OF ABSTRACT
UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED	UNLIMITED

Foreword

The Civilian-Military Interest Survey (C-MIS) was developed as part of an ongoing effort to enhance the Navy's applicant vocational guidance and classification process, and was designed to assess applicant preferences for occupational fields. This report documents a study which compared the response patterns across various types of test subjects. This report is for use by researchers and managers.

The research was sponsored by the Chief of Naval Personnel (PERS-23), under reimbursable Work Unit 93WRR5121. Results were previously briefed to PERS-23.

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Summary

The Civilian-Military Interest Survey (C-MIS) was developed as part of ongoing research to enhance the Navy's enlisted accessioning system. C-MIS, a 90-item interest inventory, measures interests on the six dimensions of the Holland system. The instrument was developed in response to the need for a brief, easily administered and scored measure of vocational interests that could be used in the accessioning process.

This report addresses a study which compared the response patterns of various types of test subjects, including high school students, Navy career recruiters, Navy recruiters in training, Navy recruits, and Navy enlistment applicants.

The findings are generally supportive of the Holland theory. Male and female Navy recruits scored markedly different on the scales of the C-MIS. The differing response patterns of the several categories of respondents are discussed with respect to implications for policy in the areas of recruiting, career development, selection, and advertising.

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Introduction

Background

There have been a number of research efforts devoted to the development of interest measures for use with enlisted recruiting and accessioning. Given the exigencies of the recruiting and classification processes, the criteria for interest measures to be considered for use in that environment were clear:

- High reliability and validity;
- Gender neutrality;
- Clear linkage with Navy occupational fields; and,
- Brevity and ease of administration.

A decision was made to develop an interest measure based on the Holland "hexagonal" coding system (Holland, 1985). This system, also known as the RIASEC model, classifies jobs into one of six major categories: Realistic, Investigative, Artistic, Social, Enterprising, or Conventional. Subclassifications of the jobs results in the assignment to each job of a three-letter Holland Code. The advantage of Holland coding was that occupational exploration, vocational guidance, and ultimately classification could be pursued within job groupings rather than necessarily focusing on particular occupations, making the interest measurement more compatible with recruiting and accessioning policies.

The Civilian-Military Interest Survey (C-MIS) was developed by the Navy, under contract, using the item pool drawn from the Vocational-Career-Interest Examination (VOICE), an interest inventory developed by the Air Force Human Resources Laboratory (Alley, 1978). The VOICE items primarily dealt with blue-collar occupations, the test itself being for use with enlisted personnel.

Additional items were developed to ensure coverage of all Holland (1985) dimensions of the RIASEC model. The augmented inventory was then administered to a construction sample of 790 male and female Navy recruits, who also were administered the Vocational Preference Inventory (VPI) (Holland, 1986). Item analyses against the six scales of the VPI were conducted separately to create six 15-item scales that worked well for both males and females. The C-MIS produces a score for the test subject on each of the R-I-A-S-E-C scales.

The 90-item C-MIS was administered to a cross validation sample of 525 male and female Navy recruits. The criterion used was the VPI. Results indicated that the C-MIS scales had internal consistency reliabilities ranging from .83 to .93 for men and .84 to .95 for women. Correlations between the C-MIS and VPI scales ranged from .67 to .71 for males and .71 to .84 for females. The C-MIS thus proved scientifically defensible and suitable for research with both males and females. For further information, consult Gottfredson (1988).

C-MIS uses a Like-Indifferent-Dislike (L-I-D) response format. Scoring is done by subtracting the number of Ds from the number of Ls, with the Is being disregarded. This produces scores on each of the six scales. The individual's final score is the three letters representing the highest three scores, sometimes called the Holland three-letter code.

With respect to brevity and ease of administration, repeated tests showed that administration time averaged 8.45 minutes, with a range of 6.1 to 11.3 minutes. Furthermore, scoring time ranged from 37 seconds to 2.3 minutes, averaging less than a minute and a half (1.4 minutes). These results demonstrated the logistical feasibility of using C-MIS in recruiting and accessioning.

Linkage with entry level Navy jobs was accomplished with the classification of those jobs according to the Holland coding system (see Holland & Baker, 1986).

The most recent research with C-MIS was a study to determine the test-retest reliability of the instrument. The sample included 101 male and 99 female Navy recruits. Testing was done during the recruits' pre-training week, and the subjects were retested during their ninth or tenth week of training. Correlations ranged from a low of .76 to a high of .90, indicating excellent test-retest reliability of the C-MIS instrument. For further information, see Baker and Sands (1996).

Problem

Although the construction and cross validations had produced strong evidence of respectable validity for the C-MIS instrument, the gender neutrality of the instrument had been substantiated, the ease of use demonstrated, and the reliability of the C-MIS had been shown, the testing had been limited to Navy recruits. Administration to other categories of respondents was indicated as a further step in research on the C-MIS.

Purpose

The purpose of the research reported herein was to compare the C-MIS response patterns of diverse samples of respondents.

Approach

The C-MIS was administered by trained personnel to samples of Naval and civilian personnel. These samples included:

1. High school students ($N = 57$): the C-MIS was furnished to a civilian education specialist for use with students taking the Armed Services Vocational Aptitude Battery;

2. Navy career recruiters ($N = 37$): C-MIS was administered to senior enlisted personnel undergoing training in supervisory courses at the Navy Recruiting Orientation Unit;

3. Navy recruiters in training ($N = 263$): C-MIS was administered to several classes of petty officers undergoing training as recruiters;

4. Navy recruits ($N = 200$): C-MIS was administered to recruits during their basic training; and,

5. Navy enlistment applicants ($N = 2468$); C-MIS was administered to all applicants processed through three geographically dispersed Military Entrance Processing Stations.

The highest single score (Holland primary code) was the basis for comparison across groups. Data were entered into a computer and analyzed using Statistical Package for the Social Sciences (SPSS-X).

Results

Table 1 shows the response patterns for Navy career recruiters (N = 37), Navy recruiters in training (N = 263) (both samples being overwhelmingly male), and male Navy recruits (N = 101). The results may indicate the effects of work upon the organizational population composition with respect to vocational interests. Of course, the reverse could be true: those persons whose Holland codes were most congruent with their job assignments in the Navy's world of work tended to remain in the Navy.

Table 1

RIASEC mean scores for career recruiters, recruiters in training, and male recruits.

	Realistic		Investigative		Artistic		Social		Enterprising		Conventional	
Respondents	$\bar{X}$	**SD**	$\bar{X}$	**SD**	$\bar{X}$	**SD**	$\bar{X}$	**SD**	$\bar{X}$	**SD**	$\bar{X}$	**SD**
Recruiter Trainees (N = 263)	5.8	7.7	1.6	8.4	3.0	6.5	3.4	6.2	1.7	6.2	0.1	6.4
Career Recruiters (N = 37)	3.6	7.6	1.9	7.4	1.3	5.4	3.7	5.6	1.6	4.6	-0.1	5.3
Male Recruits (N = 101)	3.1	9.0	0.1	9.4	2.6	7.0	-0.3	6.9	-2.1	6.5	-1.5	7.8

Mean score on the Realistic scale is 3.1 for male recruits. It is also their highest mean score. This is advantageous, in that the majority of the Navy jobs are in the Realistic category, and the majority of job openings are for young males. When we look at recruiters in training, we find the Realistic mean score to be even higher (5.8). This is consistent with the facts that candidates for recruiter duty, the greatest bulk of whose jobs are in the Realistic category, are drawn from the fleet; and, these recruiter candidates are in their second or subsequent enlistment and are among the top performers. That is, they are, by and large, the survivors and the experts in technical occupations. Career recruiters, on the other hand, are drawn primarily from the ranks of those having had one or more successful tours as a recruiter. As such, they are moving away from the hands-on technical jobs, have been more involved in dealing with people and the mean Realistic score for this group has dropped back to 3.6.

Logical moves are also recorded for the mean Investigative score, which has a low of 0.1 for male recruits, rises to 1.6 for recruiter students, and rises again to 1.9 for career recruiters. This again mirrors changes in job task requirements. Finally, it is probably very fortunate that the mean Social score changes with the varying career requirements. Recruits scored -0.3 on the Social scale; however, petty officers, having to deal with personnel in the work situation, scored much higher on Social, at 3.4. Career recruiters whose supervisory tasks require continuous work with people scored even higher, at 3.7.

In Table 2 we show the mean scores of high school students, a sample approximately equal in male-female composition. It is apparent that few of the occupations or activities seem attractive to

the students. Such is not unexpected because items on the C-MIS primarily reflect blue-collar occupational activities. However, they scored highest on Artistic, Social, and Investigative, a response pattern not inconsistent with those who are aspiring to further education and professional occupations.

Table 2

RIASEC mean scores for high school students (N = 57).

	Realistic		Investigative		Artistic		Social		Enterprising		Conventional	
Respondents	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD
High School Students (N = 57)	-4.7	9.9	-2.4	9.0	-1.4	7.4	-2.1	6.6	-3.8	5.6	-4.5	6.7

Table 3 reflects interesting response patterns which differ by geographic region. Shown are the mean RIASEC scores for male Navy applicants in three major areas: Chicago, San Diego, and Jacksonville, Florida. The reasons for the differences in response patterns across three supposedly similar groups require further exploration. Nevertheless, consistent differences in mean response patterns such as these might indicate the need for different advertising emphases and different recruiting targets.

Table 3

RIASEC mean scores for career recruiters, recruiters in training, and male recruits.

	Realistic		Investigative		Artistic		Social		Enterprising		Conventional	
Respondents	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD
Chicago (N = 846)	2.6	8.3	-0.4	8.7	-1.9	7.5	-1.0	7.1	-2.9	6.7	-3.4	6.6
Jacksonville (N = 858)	2.5	8.2	1.1	8.8	-0.6	7.5	-0.2	7.0	-1.9	6.8	-2.5	6.8
San Diego (N = 531)	3.1	8.5	1.9	8.7	-0.6	7.4	0.2	7.3	-2.3	6.3	-2.7	6.4

Even more serious implications for manpower and recruiting are to be found in a comparison across male and female recruits and applicants. These are shown in Table 4. It is obvious that males and females differ significantly in mean response patterns. For example, female Navy recruits score much higher than males on Social and Artistic, but very much lower on Realistic. This would indicate that, given the predominantly Realistic Navy job world, potential job satisfaction is less for females, or, that many women will have to take jobs in their less preferred areas. It also indicates that females in the United States, at least those enlisting in the Navy, tend to prefer traditional (e.g., medical service, instructional, clerical) rather than non-traditional (e.g.,

machinery repair, technical) occupations. Remember, this is information furnished by recruits, i.e., women already having enlisted and entered recruit training.

Table 4

RIASEC mean scores for Navy recruits and Navy enlistment applicants.

	Realistic		Investigative		Artistic		Social		Enterprising		Conventional	
Respondents	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD
Recruits												
Men (N = 101)	3.1	9.0	0.1	9.4	2.6	7.0	-0.3	6.9	-2.1	6.5	-1.5	7.8
Women (N = 99)	-6.1	8.6	0.5	9.7	5.9	7.0	4.7	6.5	-1.9	6.5	-1.1	7.6
Applicants												
Men (N = 2235)	2.7	8.3	0.7	8.9	-1.1	7.5	-0.4	7.1	-2.4	6.7	-2.9	6.7
Women (N = 233)	-4.9	9.5	-0.7	9.0	2.6	7.4	4.4	7.1	-1.9	7.0	-0.9	7.7

If we take the process back one step, we see that data from Navy applicants shows a similar pattern. Table 4 reveals that the response patterns are again very different for males and females, with the females again tending to favor traditional occupations. These choices are by those women who are already somewhat decided on entering the Navy job world.

Given the few enlisted jobs in the categories other than Realistic and Conventional, the Navy will have difficulty in classifying recruits in jobs congruent with their Holland primary code, if that code is A or S (few choose E, anyway). This does not mean that such enlistees will not perform well; interests, of course do not altogether govern performance. There is good potential for job satisfaction if classification is made congruent with the Holland secondary, or even tertiary code.

It could be the case, however, that special incentives might have to be offered to those who are asked to enter occupational areas incongruent with their vocational interests. If the policy to enlist women in an increasing number of occupational areas is continued, then there is potential for lowered job satisfaction among female members. Most of the jobs remaining to be opened to women are non-traditional ones for females; yet female applicants continue to favor traditional jobs.

Conclusions

1. The Holland theory (see Appendix) is generally supported by the results of this research.

2. Males and females continue to show differences in vocational preferences.

3. Varying response patterns have important implications for policy in areas such as recruiting, career development, selection, and advertising.

Recommendations

1. Continue research on C-MIS response patterns using larger and even more diverse samples of test subjects.

2. Conduct longitudinal research to determine if there are convergent trends in male and female response patterns over time.

3. Conduct longitudinal research to determine if response patterns of individuals differ at various points in their careers.

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Appendix A

The Holland System and Navy Recruiting

INTRODUCTION

Although there are some significant differences in applicant characteristics, legal commitments, and constraints on freedom, in general, the factors affecting vocational choice and occupational placement within and outside the services are similar. In both cases, personal abilities, interests, and preferences must be compared with institutional factors such as job openings, minimum standards, and employment incentives.

A number of occupational classification systems are currently used by the Armed Forces, but, unfortunately, these systems group occupations according to administrative or logistical convenience. Until now, none was designed to facilitate guiding an applicant into the right job. In addition, military occupational classifications do not share common terms with occupational preference tests or applicant vocabulary, making the task of matching applicant preferences to occupational descriptions highly difficult.

The use of preferences logically requires the classification of both preferences and jobs according to a common scheme. This is particularly important in military recruiting, where most job applicants have no work experience. The Holland classification system has corrected that deficiency by classifying both jobs and individuals' vocational interests with common terms.

THE HOLLAND CODING SYSTEM

Dr. John L. Holland developed a theory that people and environments can generally be classified into six types. The Holland system further categorizes people, occupations, or environments by subtypes that allow more precise descriptions. The classification scheme includes six main categories (see Figure 1) corresponding to the six types: RIASEC. (This is often called the Hexagonal Model.) Here are the six main categories:

R Occupations classified as Realistic (or R) tend to involve concrete and practical activity involving machines, tools, or materials.

I Occupations classified as Investigative (or I) tend to involve analytical or intellectual activity aimed at problem solving, trouble shooting, or the creation and use of knowledge.

A Occupations classified as Artistic (or A) generally involve creative work in the arts: music, writing, performance, sculpture, or other relatively unstructured and intellectual endeavors.

S Occupations classified as Social (or S) typically involve working with people in a helpful or facilitative way.

E Occupations classified as Enterprising (or E) tend to be involving working with people in a supervisory or persuasive way, in order to achieve some organizational goal.

C Occupations classified as conventional (or C) typically involve working with things, numbers, or machines in an orderly way to meet the regular and predictable needs of an organization.

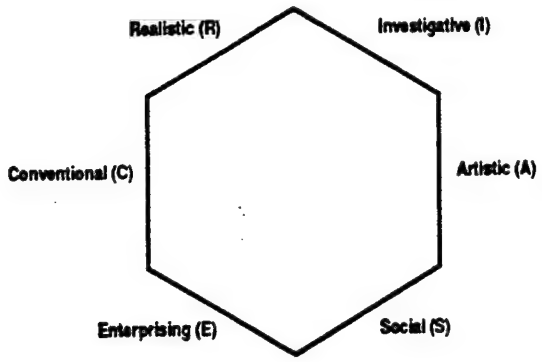

Figure 1. Holland hexagonal classification.

Each main category contains 5 to 16 subcategories, such as, Realistic-Investigative-Artistic (RIA), Realistic-Investigative-Social (RIS), and so on. These are the three-letter Holland codes. The first letter is the most important: It shows the major category into which the occupation or person falls and gives the most information. The second and third letters, in descending importance, provide supplementary information by showing the categories or types that the person or job next most resembles.

No person or job is of a completely pure type. The number of jobs that might fit a particular person is large. Some people resemble two or three theoretical types to the same degree, and some jobs resemble two or more occupational groups to the same degree. Therefore, describing both people and jobs in terms of their degree of resemblance to several types of groupings is useful. For example, a person categorized as an RIE might be expected to exhibit the characteristics of the Realistic type most, the Investigative type next, and so on. From another perspective, jobs categorized as RIE should require Realistic activities, competencies, and perceptions, most, Investigative activities, competencies, and perceptions next, etc.

A variety of types of people are found working successfully within any single occupation, but some types are found more frequently than others. For example, most people working as guidance counselors have Holland preference codes that include S, A, and E, but a few have codes of C or R. In short, all occupations tolerate a range of types, but some personality types appear to fit more successfully with an occupation's demands than others. This is called person-environment fit.

Occupational classification according to the hexagonal model also provides a method for estimating the "psychological distance" between successive jobs within a career, between two or more vocational preferences, or between individual preference and a specific job. In short, the degree of preference or career change can be estimated. Psychological distance can be defined as dissimilarity of personality types or occupational types. Within the hexagonal arrangement, occupations located near each other within the hexagon are more alike than occupations spaced farther apart from each other. Thus, career changes such as from social worker (S) to counselor (S) appear to be less important than career changes such as from scientist (I) to business executive (E).

The Holland classification scheme has undergone a number of revisions and tests of usefulness from 1959 to the present. Holland's theory is probably now the most widely used organizing principle for vocational interests in the world. It is used in classifying enlistees by several of the free-world's Armed Forces. A recent manual noted more than 300 articles, books, chapters, and reviews examining the theory in experimental tests of its predictions, its value in organizing personal and occupational information, and its practical use. In summary, the advantages of Holland's theory are:

1. The typology is easy to understand.

2. It has many characteristics of a useful theory--clear definitions, internally consistent structure, broad scope, and formalizations for dealing with personal development and change.

3. It has a broad research support based on studies of children, adolescents, college students, and adults (including Navy recruits), both men and women, up to 70 years old.

4. The theory is easily applied to practical problems such as the development of vocational assessment devices, the classification and interpretation of personal and environmental data, and the conduct of vocational counseling.

In 1979 the U.S. Department of Labor published its Guide to Occupational Exploration with this acknowledgement:

> In recognition of the extensive research on the Holland model and its widespread use in vocational counseling today, the USES interest areas were arranged according to the Holland categories.

Similarly, the Canadian government's dictionary of Holland codes includes an acknowledgement of the usefulness of the approach.

The classification scheme is contained in two publications: The Dictionary of Holland Occupational Codes (DHOC) and The Occupations Finder (Holland, 1978). The DHOC was developed by keying well-established codes in the 1978 Occupations Finder to occupational ratings for each of 12,099 occupations in The Dictionary of Occupational Titles. The DOT makes the 12,099 occupational titles of the DOT more accessible to counselors, clients, and researchers who use the Holland classification to find or to organize occupational information. Figures 2 and 3 show sample pages from the DHOC and The Occupation Finder, respectively.

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Figure 2. Sample page (p. 296) from the Dictionary of Holland Occupational Codes.

Investigative Occupations (Continued)

CODE: IER	ED
Chief Engineer (010.167-010)	6
Geographer, Physical (029.067-014)	6
Mathematician (020.067-014)	6
Pollution-Control Engineer (019.081-018)	6
Psychologist, Educational (045.067-010)	6
Seismologist (024.061-050)	6
Technical Director, Chemical Plant (008.167-010)	6
Engineer of System Development (003.167-026)	5
Geodetic Computer (018.167-014)	5
Manager, Land Surveying (018.167-022)	5
Navigator (196.167-014)	5
Project Engineer (019.167-014)	5
Sales Engineer, Agricultural Equipment (013.151-010)	5
Surveyor, Marine (018.167-046)	5
Systems Analyst, Electronic Data (012.167-066)	5

CODE: IEA	ED
Chemical-Laboratory Chief (022.161-010)	6
Director, Quality Control (012.167-014)	6
Superintendent, Water-And-Sewer Systems (184.161-014)	6
Land Surveyor (018.167-018)	5
Medical Technologist, Chief (078.161-010)	5

CODE: IES	ED
Allergist-Immunologist (070.107-010)	6
Metrologist (012.067-010)	6
Safety Manager (012.167-058)	6
Sociologist (054.067-014)	6
Appraiser (188.167-010)	5
Electronics-Test Engineer (003.061-042)	5
Job Analyst (166.267-018)	5
Nurse, Supervisor, Occupational Health Nursing (075.137-010)	5
Occupational Analyst (166.067-010)	5
Public Health Service Officer (187.117-050)	5
Pharmacist (074.161-010)	5

CODE: IEC	ED
Highway-Administrative Engineer (005.167-022)	6
Photogrammetric Engineer (018.167-026)	6
Fire-Protection Engineer (012.167-026)	5
Programmer, Information System (020.187-010)	5
Tissue Technologist (078.361-030)	5

CODE: ICR	ED
Chief Drafter (007.261-010)	5
Cytotechnologist (078.281-010)	5
Management Analyst (161.167-010)	5
Programmer, Process Control (020.187-014)	5

CODE: IRA	ED
Surgeon (070.101-094)	6
Veterinarian, Poultry (073.101-014)	5

CODE: IRS	ED
Aeronautical Engineer (002.061-014)	6
Agronomist (040.061-010)	6

CODE: Uts (cont.)	ED
Anesthesiologist (070.101-010)	6
Animal Breeder (041.061-014)	6
Animal Scientist (040.061-014)	6
Biochemist (041.061-026)	6
Botanist (041.061-038)	6
Cardiologist (070.101-014)	6
Ceramic Engineer (006.061-014)	6
Dairy Technologist (040.061-022)	6
Entomologist (041.061-046)	6
Fiber Technologist (040.061-026)	6
Forest Ecologist (040.061-030)	6
Geneticist (041.061-050)	6
Geophysicist (024.061-030)	6
Parasitologist (041.061-070)	6
Pediatrician (070.101-066)	6
Plant Breeder (041.061-082)	6
Plant Pathologist (041.061-086)	6
Poultry Scientist (040.061-042)	6
Psychologist, Experimental (045.061-018)	6
Radiologist (070.101-090)	6
Range Manager (040.061-046)	6
Soil Scientist (040.061-058)	6
Wood Technologist (040.061-062)	6
Air Analyst (012.261-010)	5
Chemical Research Engineer (008.061-022)	5
Chemical Laboratory Technician (022.261-010)	5
Electrical Engineer (003.061-010)	5
Hydraulic Engineer (005.061-018)	5
Meteorologist (025.062-010)	5
Veterinarian (073.101-010)	5
Cloth Tester (029.381-010)	4
Laboratory Assistant (029.381-014)	4
Respiratory Therapist (079.361-010)	4
Scientific Helper (199.364-014)	4

CODE: IRE	ED
Aeronautical-Research Engineer (002.061-026)	6
Anthropologist (055.067-010)	6
Aquatic Biologist (041.061-022)	6
Archeologist (055.067-018)	6
Architect, Marine (001.061-014)	6
Astronomer (021.067-010)	6
Biomedical Engineer (019.061-010)	6
Biophysicist (041.061-034)	6
Chemical Engineer (008.061-018)	6
Chemist (022.061-010)	6
Chemist, Food (022.061-014)	6
Computer-Applications Engineer (020.062-010)	6
Dairy Scientist (040.061-018)	6
Electrical Engineer, Power System (003.167-018)	6
Environmental Analyst (029.081-010)	6
Ethnologist (055.067-022)	6
Geographer (029.067-010)	6
Geologist (024.061-018)	6
Hydrologist (024.061-034)	6
Marine Engineer (014.061-014)	6
Metallurgist, Physical (011.061-022)	6
Nuclear Engineer (015.061-014)	6
Operations-Research Analyst (020.067-018)	6
Pathologist (070.061-010)	6
Periodontist (072.101-030)	6

Figure 3. Sample page (p. 6) from The Occupations Finder.

APPLYING THE HOLLAND SYSTEM TO NAVY JOBS

A significant step towards use by U.S. Armed Forces was the application of Holland coding to vocational guidance during enlistment. By assigning three-letter Holland codes to both applicant preferences and entry-level Navy occupations, it became feasible to use preferences in the recruiting system to find military occupations that are compatible with an applicant's interests.

Information on Navy occupations was collected from a variety of sources. Refer to the originals for further information. Sources include:

1. Dictionary of Occupational Titles (DOT; Department of Labor, 1977), which contains information on over 12,000 occupational titles.

2. Military Occupational and Training Data (MOTD; Office of the Assistant Secretary of Defense, 1985), which resulted from a joint-service effort to cross-classify military and civilian jobs.

3. Manual of Navy Enlisted Manpower and Personnel Classifications and Occupational Standards, Section II, Navy Enlisted Classifications (Department of the Navy, 1986), which is used by the Navy in recruit classification.

4. Navy Classifier's Rating Fact Sheet (Department of the Navy, undated), which is also used in recruit classification.

Information in these sources was related to information contained in the DHOC either directly or through expert judgment by Dr. Holland. Each rating was assigned a three-letter code.

A "picture" of the distribution of Navy results for entry-level jobs is provided by Figure 4. Over half the entry-level jobs in the Navy are Realistic (involve concrete, practical work with machines, tools, or materials), with Investigative (analytic problem-solving) and Conventional (standardized working with things, numbers, and machines) as the next most common primary Holland classifications.

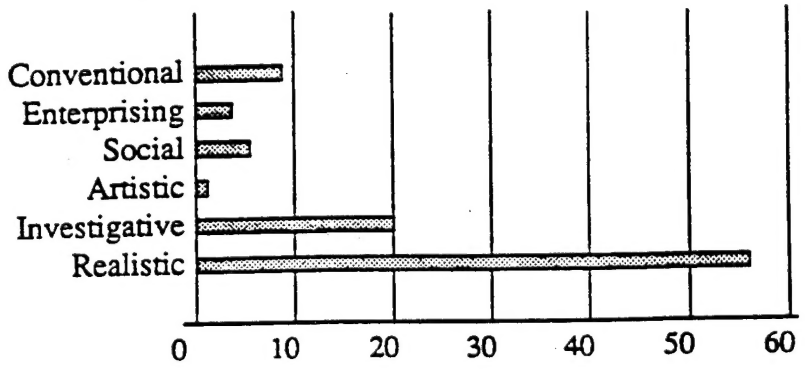

Figure 4. Holland categories of Navy entry-level jobs.

To show it another way, the distributions of Navy entry-level enlisted occupations according to Holland codes is presented in Table 1 in order of predominance. These distributions are arranged following the hexagonal model main groups in RIASEC order and subgroups of RIS, RIE, REI, RES, REC, and so on.

The occupational distributions of Navy jobs forces us to recognize certain limitations. The most obvious is that recruits with Realistic interests are likely to find the military compatible, but recruits with Investigative, Artistic, Social, Enterprising, and Conventional interests have fewer possibilities. Recruits with Artistic interests may find the usual Navy jobs a particularly poor fit, since most Navy entry-level jobs are similar to the occupational groups of skilled tradesmen. Among the subcategories, the RIs RSs, REs, RCs and IRs would be expected to find the military environment most compatible.

It is recognized that there are significant differences between Navy and civilian jobs. However, current thinking regards the best approach to the problem of developing military occupational exploration and guidance systems as one that considers most civilian and military jobs as identical, while addressing the unique military factors separately. In that light, the Holland codes should prove of great benefit. Their use should make it easy to determine applicant job preferences, focus the exploration of Navy ratings, and enhance the applicant guidance provided during the enlistment process.

Table 1

Distributions of Navy Entry-level Enlisted Occupations

Navy (N = 95)

Realistic = 59%		**Investigative = 18%**	
RIS	4	IRS	2
RIE	18	IRE	15
RIC	1		17
RSE	5		
REI	12	**Conventional = 9%**	
RES	10	CRS	1
RCS	1	CSE	2
RCE	1	CSR	1
	55	CES	2
		CER	1
Social = 6%		CEI	1
SEC	1	CIE	1
SER	1		9
SIA	2		
SIR	1	**Artistic = 2%**	
SAI	1	AEI	2
	6		2
Enterprising = 6%			
ERS	1		
EAS	1		
ESC	3		
ESR	1		
	6		

Distribution List

Recruiting and Retention Program (PERS-22) (4)
Defense Technical Information Center (4)